

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listing, of claims in the application.

**Listing of the Claims:**

1. (Cancelled)

2. (Previously presented) In an apparatus for analyzing biological materials comprising a plurality of heating devices supported by a heating device support, each heating device adapted to receive a slide and including a heater and a sensor, and control electronics in communication with the heating devices for receiving data from the sensors of the heating devices and for individually controlling the heaters of each of the heating devices, a method for amplifying a target molecule within tissue samples mounted on slides received by the heating devices comprising the steps of:

denaturing target molecules in the tissue sample by independently controlling the temperature of the heaters;

annealing at least one oligonucleotide primers to the target molecules by independently controlling the temperature of the heaters;

performing polymerase-mediated extension on the annealed oligonucleotide primer-target molecules by independently controlling the temperature of the heaters; and

repeating the steps of denaturing, annealing and performing polymerase-mediated extension at least one time.

3. (Original) The method of claim 2 wherein the step of repeating is performed a predetermined number of times.

4. (Original) The method of claim 2 wherein the step of denaturing includes controlling the heaters so that the temperature is at least 94°C.

5. (Original) The method of claim 2 wherein the step of annealing includes controlling the heaters so that the temperature is between 37°C and 65°C.

6. (Original) The method of claim 2 wherein the step of annealing includes controlling the heaters so that the temperature is approximately 50°C.

7. (Original) The method of claim 2 wherein the step of performing polymerase-mediated extension includes controlling the heaters so that the temperature is between 65°C and 75°C.

8. (Original) The method of claim 2 wherein the step of performing polymerase-mediated extension includes controlling the heaters so that the temperature is approximately 70°C.